

**MARK SCHEME for the October/November 2011 question paper  
for the guidance of teachers**

**9691 COMPUTING**

**9691/22**

Paper 2 (Written Paper), maximum raw mark 75

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Mark schemes must be read in conjunction with the question papers and the report on the examination.

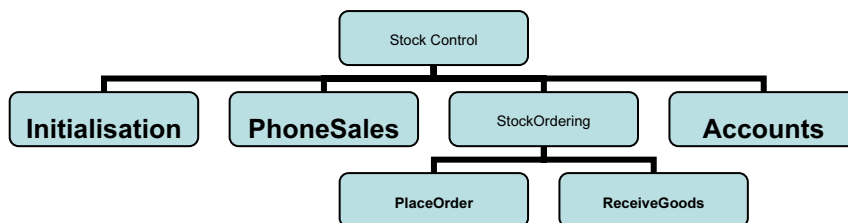
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- 1 (a) e.g.  
 -each can work on individual modules  
 -modules can be written in parallel  
 (answer must be specific to this scenario) Max [1]

- (b) Each box correctly labelled (Initialisation, PhoneSales, Accounts) Order significant



[1]

- (c) 1 mark for 2 boxes under StockOrdering  
 1 mark for correct labelling [2]

- (d) -these will be local variables  
 -that only have effect in the module they are in // local scope  
 -stored in different memory locations  
 -and have no meaning outside that module Max [2]

- (e) (i) -keywords/reserved words  
 -a word in the vocabulary of the language  
 -that can only have the meaning defined in that language Max [1]

- (ii) Any keyword // word breaking their language's rule [1]

- (iii) e.g. Visual Basic:  
 -names must begin with a letter  
 -must not contain a space/punctuation characters/certain characters  
 -must be unique in their block/scope  
 -can't be more than 64 characters  
 -can't be a keyword [3]

- (f) (i) 580 CAO [1]

- (ii) (a-b)\*0.1 [1]

- (iii) Black box CAO [1]

- (g) (i) -valid/normal data  
 -extreme/boundary data [2]

- (ii) 6 different types of test data sets + 6 sensible reasons  
 Reason must relate to the scenario  
 Value + correct reason = 1 mark [6]

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(h) (i) (ContractLength=12) OR (ContractLength=18) OR (ContractLength=24)

*1 mark for 3 separate correct conditions*  
*1 mark for ORs*

*Alternative answer:*

ContractLength IN [12,18,24]

*2 marks (1 mark for IN, 1 mark for [12,18,24])*

[2]

(ii) (FreeTexts >= 0) AND (FreeTexts <= 600)

*Alternative: (FreeTexts > -1) AND (FreeTexts < 601)*

*1 mark for 2 separate correct conditions*  
*1 mark for AND*

*Alternative answer:*

NOT ((FreeTexts < 0) OR (FreeTexts > 600))

[2]

(iii) -data outside expected range / invalid data could be entered  
 -the program would not find an associated record/data

[2]

2 (a) (i) -Valid data entered CAO

[1]

(ii) -Invalid data. Try again CAO

[1]

(b) e.g. Pascal

```
READLN (NumberOfYears);
CASE NumberOfYears OF
  0..2: WRITELN('Valid data entered');
  ELSE WRITELN('Invalid data. Try again');
END;
```

e.g. VB6

```
NumberOfYears = txtBox.Text
SELECT CASE NumberOfYears
  CASE 0 TO 2
    MsgBox "Valid data entered"
  CASE ELSE
    MsgBox "Invalid data. Try again"
END SELECT
```

e.g. VB 2005

```
NumberOfYears = Console.ReadLine
SELECT CASE NumberOfYears
  Case 0 TO 2
    Console.WriteLine("Valid data entered")
  Case Else
    Console.WriteLine("Invalid data. Try again")
END SELECT
```

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e.g. C#

```

numberOfYears = Console.ReadLine();
switch (numberOfYears)
{
    case 0:
    case 1:
    case 2:
        Console.WriteLine("Valid data entered");
        break;
    default:
        Console.WriteLine("Invalid data. Try again");
        Break;
}

```

e.g. Java

```

numberOfYears = reader.readLine();
switch (numberOfYears) {
    case 0:
    case 1:
    case 2:
        System.out.println("Valid data entered");
        break;
    default:
        System.out.println("Invalid data. Try again");
        break;
}

```

*Accept write.write instead of System.out.println*

*1 mark for correct input*

*1 mark for CASE statement correct*

*1 mark for all cases correct*

*1 mark for correct output for Valid data entered*

*1 mark for correct output for Invalid data. Try again*

*1 mark for conditions indented*

*No marks for pseudocode (give marks for clear code, even if unidentified)*

*For Python accept if ... elif .... elif ... else ...*

Max [5]

(c) -Sequence, selection (*in any order, these words only*)

[1]

(d) -A process of repeating  
 -A block of statements/number of steps  
 -Until some condition is met

Max [2]

(e) *1 mark for a counter variable*  
*1 mark for correctly initialising counter*  
*1 mark for incrementing counter*  
*1 mark for correct condition for terminating*  
*1 mark for correct output from decision*

[5]

(f)

Field Name	Data Type	Field Size (bytes)	
PlayerID	Integer/byte/shortint	a value within 1–6	<i>NOT a range</i>
Sex	Boolean/character	1	
PlayerName	String/Text	a value within 10–50	<i>NOT a range</i>
NumberOfYears	Integer/byte/shortint	a value within 1–6	<i>NOT a range</i>
DateOfBirth	Date/Integer/String	2/4/6/8/10	

1 mark per cell

[10]

(g) (i) -logic (error)

[1]

	(i)	(ii)
EITHER	Index ← 1	Index ← 0
OR	WHILE Index < 30	WHILE Index <=30 or WHILE Index < 31
	[1]	[1]

(h) NoOfFemales ← 0  
FOR Index ← 1 TO 30  
  IF Squad[Index].Sex = 'f'  
  THEN  
    NoOfFemales ← NoOfFemales + 1  
  ENDIF  
ENDFOR

1 mark for correct FOR loop

1 mark for correct content of IF statement and condition

1 mark for ENDFOR in correct position or equivalent structure

[3]

3 (a)

MyWord	i	LENGTH (MyWord)	TempNo	Temp Word[1]	Temp Word[2]	Temp Word[3]	Surprise
cab							
	1						
		3					
			100				
				d			
	2						
			98				
					b		
	3						
			99				
						c	dbc

1 mark for correct i (2,3)

1 mark for correct TempWord[1] (d)

1 mark for correct TempWord[2] and TempWord[3] (b and c)

1 mark for correct surprise (dbc)

Max [3]

(b) -codes each letter to the next letter

[1]

(c) -assigns return value to Surprise  
-that value is returned to the function call  
-name of function used as a variable

Max [2]

(d) -is a subroutine // can be called more than once // can be called from different locations  
-given a name/identifier  
-may take parameter values from the program  
-may return parameter values to the program

Max [3]

(e) (i) -indentation  
-meaningful/sensible variable names

[2]

(ii) -evaluates the ASCII value of the current character  
-adds 1 to that value  
-puts the new character in current letter position

[3]

(f) -joining  
-two strings together

[2]